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1112-1 – Safety and Health Management (Chapter 16)
Respiratory Protection

1. Explanation of Material Transmitted:
This Manual Release Supplement Transmits a new supplement to the BLM Safety and Health Management Handbook.

2. Reports Required: None

3. Materials Superseded: None

4. Filing Instructions: File as directed below.

REMOVE:	INSERT:
None	Insert at end of Chapter 16 with Illustrations.

Signed by
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Associate State Director

Authenticated by
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Management Assistant

Safety and Health Program
Respiratory Protection Policy

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
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SAFETY AND HEALTH PROGRAM
RESPIRATORY PROTECTION POLICY

OR/WA Supplement to BLM Manual Handbook H-1112-1
Safety and Health Management

AUGUST 2003
Oregon State Office

H-1112-1 SAFETY AND HEALTH MANAGEMENT

16.3.1 Policy Statement

The Oregon/Washington Bureau of Land Management (BLM) is committed to providing a safe and healthful work environment for all employees. The BLM has many controls and work procedures, including administrative and engineering controls, in place which reduce employee exposure to atmospheric hazards. However, many times these controls are not sufficient to fully protect employees while they are performing certain work tasks. This Respiratory Protection Policy provides guidance for the use of certain types of respirators to minimize employee exposure to atmospheric hazards on the job in accordance with *OSHA Standard 29 CFR 1910.134, Subpart I Respiratory Protection – Personal Protective Equipment*.

16.3.2 Purpose and General Information

While most air in the work environment is safe to breathe, there are some work procedures which necessitate the use of some type of respiratory protection. When employees must work in environments with insufficient oxygen or where harmful dusts, fogs, smoke, mists, fumes, gases, vapors, or sprays are present, respirators should be worn. Many of these health hazards may cause cancer, lung impairment, other types of diseases, and even death.

Where toxic substances are present in the workplace and engineering controls are inadequate to reduce or eliminate these substances, respirators are required. Some atmosphere-supplying respirators can also be used to protect against oxygen-deficient atmospheres. Increased breathing rates, accelerated heartbeat, and impaired thinking and coordination occur more quickly in an oxygen-deficient atmosphere. Even a momentary loss of coordination can be devastating if it occurs while an employee is performing a potentially dangerous activity such a climbing a ladder or using a power tool.

Strategies for preventing atmospheric contamination may include enclosing or confining the contaminant-producing operation, exhausting the contaminant, or substituting less toxic materials for the substances currently used.

A respirator is a protective device that covers the nose and mouth or the entire face or head to guard the wearer against hazardous atmospheres. Respirators may be:

- Tight-fitting – that is, half masks which cover the mouth and nose and full face pieces that cover the face from the hairline to below the chin; or,
- Loose-fitting, such as hoods or helmets that cover the head completely.

There are *two* major classes of respirators:

- Air-purifying – this type of respirator removes contaminants from the air (such as dust masks and canister-type gas masks); and,

- Atmosphere-supplying – this type provides clean, breathable air from an uncontaminated source (such as self-contained breathing apparatus [SCBA] and airline respirators that provide air from a tank or compressor). These types of respirators are generally used for more hazardous exposures. Only oil-free air compressors are authorized to provide breathing air for employees. (Reference the OSHA Standard for specific requirements regarding compressors.)

All respirators have limitations and are **not** a substitute for effective engineering and work practice controls. When it is not possible to use these controls to reduce airborne contaminants below assigned occupational exposure levels, [such as during certain maintenance and repair operations, emergency situations, or when engineering controls are being installed], respirator use may be the best or only way to reduce worker exposure. In other cases, where work practices and engineering controls alone cannot reduce exposure levels to below the occupational exposure level, respirator use is essential.

16.3.3 Scope

BLM employees who are required to wear respirators during normal work operations and during some non-routine or emergency operations such as a spill of a hazardous substance must meet the requirements of this program. These requirements are established to prevent employee exposure to airborne contaminants greater than those permissible by OSHA standards. In the absence of OSHA standards, guidelines established by agencies such as the National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) must be used.[1]

Employees must wear respirators whenever engineering and work practice control measures are not adequate to prevent atmospheric contamination at the work site. This Respiratory Protection Policy is established to protect employees from these types of hazards on the job. The policy provides guidance regarding assessment of job hazards, examples of situations requiring the use of respirators, guidelines for voluntary use of respirators, proper respirator selection, fit testing and medical evaluation, and respirator maintenance, care and storage procedures. *Illustration 1* outlines various work tasks and identifies examples of voluntary and/or required respirator use for each.

Districts may use this policy as a template to create a Respirator Protection Policy specific to site needs. Policies must meet the minimum requirements of the OSHA Standard.

[1] Specific guidelines exist for different work operations and materials. See the OSHA Respiratory Protection Standard 29 CFR 1910.134.

16.3.4 Responsibilities

Managers and supervisors are responsible for ensuring that the respiratory protection policy is implemented for employees. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by employees who wear respirators.

Responsibilities include:

- Understanding which tasks require the use of respiratory protection through development of a risk assessment for each employee (See Illustration 4)
- Ensuring that employees have received appropriate training, fit testing, and the required annual medical evaluation for the wearing of assigned respirators
- Providing appropriate respirators and accessories for employees and ensure that all equipment is properly cleaned, maintained, and stored
- Enforcing the proper use of respiratory protection when required

The Safety Manager is responsible for overall program administration and for assisting managers and supervisors in the selection of appropriate respirators for each identified employee. The Safety Manager may identify training resources and assist in records management.

To provide supervisors with materials to meet the training requirements, a PowerPoint® presentation is available on the BLM Intranet Safety Web page at http://web.or.blm.gov/safety/training/training.htm. This site also contains additional training aids including preparation notes for supervisors, an informal quiz (also part of the Respiratory Protection PowerPoint® program), and a certificate of training completion.

Employees must demonstrate an understanding of the training objectives and the ability to use respirators properly prior to being allowed to perform work which requires their use. Employees are also responsible to wear respirators in accordance with instructions and training received. Employees must guard against damage to the respirator and report any concerns to the supervisor. Respirators must be routinely inspected before and after each use and maintained and stored as required. Employees should inform the supervisor of any respiratory hazards in the workplace that are not adequately addressed.

16.3.5 Program Elements

A. Selection Procedures

Respirators will be selected based on the identified hazards to which employees are exposed during work tasks. A hazard evaluation must be conducted for each work area where airborne contaminants may be present. (See *Section B* below.) The evaluation will include the identification and listing of hazardous substances used in the workplace, a review of work processes to determine where potential exposure may occur, and exposure monitoring to quantify potential hazardous exposures to employees.

Choosing the right respirator involves:

- Determining the type of hazard and the harmful effects that may result from exposure
- Considering user factors that affect respirator performance and reliability
- Selecting an appropriate NIOSH-certified respirator[2]

When selecting respirators, employers *must consider the chemical and physical properties of the contaminant*, as well as the *toxicity* and *concentration* of the hazardous materials and the amount of oxygen present. Other selection factors are the nature and extent of the hazard, work rate, area to be covered, mobility, work requirements and conditions, and the limitations and characteristics of available respirators.

Air-purifying respirators use filters or sorbents to remove harmful substances from the air. They range from simple disposable masks to sophisticated devices. They do not supply oxygen and must not be used in oxygen-deficient atmospheres or in other atmospheres that are immediately dangerous to life or health (IDLH).

Atmosphere-supplying respirators are designed to provide breathable air from a clean air source other than the surrounding contaminated work atmosphere. They include supplied-air respirators (SAR) and self-contained breathing apparatus (SCBA) units.

The time required performing a given task, including the time necessary to enter and leave a contaminated area, is an important factor in determining the type of respiratory protection needed. Respirators must not impair the employee's ability to see, hear, communicate, and move as necessary to perform the job safely. Another factor to consider when using respirators is the air-supply rate.

B. Hazard Evaluations – Examples

Risk assessments will be used to determine the hazard exposure, if any, of employees while performing certain work tasks. The *Risk Assessment Worksheet (*See *Illustration 4)* will be used to document findings. (Reference *Illustration 2* for TWA/PEL examples)

→ *Operations, Maintenance and Repair* – Several employees may request to wear a dust mask for nuisance dust during maintenance, cleaning, and mail-sorting activities. These infrequent and short duration activities may include the use of table saws, grinding wheels, a drill press, and portable electric and gas tools such as weed whackers, sanders, and grinders. Mail sorting can involve moving and opening packages of various sizes, sorting of letters, and stacking boxes.

[2] Respirators are classified in two basic categories and all filters and cartridges are color coded with the NIOSH approval label. A change out schedule for filters and cartridges must be developed to ensure these elements of the respirators remain effective. Respiratory selection will be in accordance with all OSHA standards and NIOSH certification codes.

→ *Sweeping* – Routine housecleaning activities require sweeping and vacuuming of floors in warehouse areas and storage rooms to prevent accumulation of dust resulting from minor maintenance and/or material storage and sorting activities. Employee may request to use dust masks to control allergy symptoms and nuisance dust.

→ *Painting (General Maintenance)* – Employees may request to wear a half-mask air purifying respirator with an organic vapor cartridge during a painting project when using oil-based paints. All employees must receive medical evaluation, fit testing and appropriate training information prior to any painting activity if they choose to wear a respirator.

→ *Tree Marking Paint* – The OR/WA Bureau of Land Management and the National Institute of Occupational Safety and Health (NIOSH) have performed monitoring of tree marking paint application.[3] The study found that employee exposure to chemicals during tree marking activities are well below the permissible exposure levels (PELs) required by the current OSHA standard. Employees may request to use a dust mask with exhalation valves to prevent inhalation of any associated paint mists.

→ *Various Biologicals* – Seed Orchard employees may request to wear dust masks to control allergy symptoms related to wood dusts generated from seed production.
Soils employees may request to wear a dust mask while performing various studies and related tasks.

→ *Emergency First Aid Providers* – As part of the *OR/WA BLM Blood Borne Pathogens Program*, all first aid/CPR kits are provided with a face mask for employee protection. This mask is recommended for all procedures to protect employees from gross contamination from a variety of blood borne pathogens and possibly M. tuberculosis.

→ *Law Enforcement* – Hazard evaluations are conducted in-house and officers are issued respirators as determined appropriate.

C. Hazard Assessment - Updating

The supervisor, with the assistance of the safety manager, will revise and update all risk assessments as needed (i.e., any time work process changes may affect exposure). Should an employee believe that respiratory protection is needed during a particular work activity; the employee should confer with the supervisor. The potential hazard will be evaluated and feasibility of respirator use determined.

[3] Results of the study are available in the Safety Office and on the Safety Intranet website at http://web.or.blm.gov/safety/sites_notes.htm.

D. Training

Training is essential to ensure correct respirator use, care and maintenance. Employees must understand how to properly select, use, and maintain respirators. All employees required to use respiratory protective equipment will receive instruction in the proper use of the equipment and associated limitations. This training will be provided initially and when changes occur in the workplace or in the type of respirator required for the job.

At a minimum, training should include information regarding the following:

- The OR/WA BLM Respiratory Protection Policy
- The OSHA Respiratory Protection Standard
- The nature of respiratory hazards associated with various work tasks
- Proper selection and use of respirators
- Capabilities and limitations of selected respirators
- How to inspect, put on and remove, and check the seals of a respirator
- Respirator maintenance and storage requirements
- Emergency use procedures
- Medical signs and symptoms that may limit the effective use of respirators

Employees must demonstrate understanding of the topics covered through hands-on exercises and a written review. Documentation of training is required.

E. Voluntary Respirator Use[4]

Any employee who voluntarily chooses to wear a respirator (i.e., for certain maintenance, painting, welding, or mail handling activities, etc.) will be provided with a copy of *Appendix D* of the *OSHA Respirator Standard* which details the requirements for voluntary use of respirators. Employees who voluntarily choose to wear filtering face piece respirators (dust masks) must comply with the procedures for respirator use, cleaning, maintenance, and storage outlined in this program. In all cases, the use of respiratory protection must not jeopardize the health or safety of the employee. Employees who voluntarily use half-face piece respirators with either filters or chemical cartridges must also comply with the medical evaluation requirement explained in this program.

[4] The entire document (Appendix D) is shown in *Reference 1-3*.

F. Medical Evaluation

Employees assigned to tasks that require respirator use must be physically able to perform the work while using the respirator. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use. A licensed physician will provide the medical evaluations. Contact the Safety Manager for information and scheduling. This service is generally provided through the Federal Occupational Health Office.

Medical evaluation procedures are as follows:

- The medical evaluation will be conducted using the questionnaire provided in *Appendix C of the OSHA Respiratory Protection Standard*. (Reference the link to *Appendix C* in the *Reference* section of this document.) All employees will be given a copy of the medical questionnaire to complete. The Safety Manager will assist employees in the review of the medical questionnaire as necessary.
- The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The questionnaire shall be administered in a manner that ensures understanding by the employee. Employees will have the opportunity to discuss the medical evaluation with the physician.

The following information will be provided to the occupational health physician for each employee requiring evaluation, accompanied by a copy of this policy.

- the type and weight of the respirator to be used
- the duration and frequency of respirator use
- the expected physical work effort
- protective clothing and equipment to be worn during the work effort
- temperature and humidity extremes that may be encountered on the job

Following the evaluation, a written medical determination is provided by the physician to both the agency and the employee regarding the employee's ability to use the respirator. The determination notes any limitation(s) on, (1) respirator use which relates to the medical condition of the employee; (2) the workplace conditions in which the respirator will be used, and; (3) if the employee is, in fact, medically able to use the respirator. Negative pressure respirators may present additional challenges to employees with certain medical conditions. The physician will determine if an alternative type of respirator must be worn by the employee.[5]

[5] If the respirator to be worn is a negative pressure respirator and the physician finds a medical condition that may place the employee's health at increased risk if the respirator is used, the agency shall provide a powered air-purifying respirator (PAPR) if it is determined that the employee can safely use this type of respirator. A subsequent medical evaluation should be scheduled to ensure successful use of the respirator and to determine is the employee is medically able to use a negative pressure respirator at a later time.

Following evaluation and clearance, and after the employee has begun to wear the respirator, additional medical evaluations will be provided under the following circumstances:

- Employee reports signs and/or symptoms related to the ability to wear the respirator
- The physician determines that reevaluation is necessary
- A change occurs in workplace conditions that may result in significant changes for the employee during the work

All examinations and questionnaires remain ***confidential*** between the employee and the physician.

G. Fit Testing

Different types of respirators and even different brands of the same type of respirator have different fit characteristics. No one respirator will correctly fit all employees. Special mountings are available to hold corrective lenses inside full face pieces. A qualified person must fit the face piece and lenses to provide good vision comfort and proper sealing. Tight-fitting respirators cannot provide proper protection without a tight seal between the face piece and the employee's face. Consequently, beards and other facial hair and jewelry or head gear that project under the face piece seal can seriously affect the fit and thus compromise effectiveness. Employees assigned to duties that require them to use tight-fitting respirators cannot have facial hair or wear certain types of jewelry.

Fit testing is required for employees wearing half-face piece air purifying respirators (APRs). Employees wearing this type of respirator will be fit tested prior to being allowed to wear any respirator with a tight fitting face piece. This testing will occur annually and when there are changes in the employee's physical condition that could affect respirator fit.

Employees will be fit tested with the make, model and size of respirator that will actually be worn on the job. All tests will be conducted following the OSHA accepted fit test protocols explained in *Appendix A – Fit Testing Procedures (Mandatory) of the OSHA Respiratory Protection Standard*. This appendix details procedures for qualitative and quantitative testing. (See the *Reference* section for the link to these procedures.)

Qualitative fit testing involves the introduction of a harmless odoriferous or irritating substance into the breathing zone around the respirator being worn. If no odor is detected by the wearer, this indicates a proper fit. Quantitative fit testing offers accurate, detailed information on respirator fit by numerically measuring the amount of air leakage into the respirator.

Employees must check respirators for proper fit and comfort prior to each use. It is important to check for holes, cracks, or any sign that the respirator might not provide full protection. Employees who use a tight-fitting respirator must perform a user seal check to ensure that an adequate seal is achieved each time the respirator is worn. Either the positive-pressure or the negative pressure user seal checks may be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

Detailed instructions for performing these user seal checks are in *Appendix B-1 User Check Seal Procedure* of the *OSHA Respiratory Protection Standard*. A brief description of each type of seal check is described below.

- Positive pressure test: Close the exhalation values on the respirator and breathe out gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal.

- Negative pressure test: Close off the inlet opening of the canister or cartridges(s) by covering with the palm of the hand or by replacing the filter seal(s). Inhale gently so that the face piece collapses slightly, and hold the breath for ten seconds. If the face piece remains in a slightly collapsed condition with no inward leakage, tightness of the respiratory is satisfactory.

Fit testing records must be maintained for each employee.

Respirators will only be used following the respiratory protection safety procedures established in this policy and in accordance with the OSHA standard. Employees may not use a respirator in a manner for which it is not certified by NIOSH or by the manufacturer.

In work situations where an atmosphere exists in which the wearer of the respirator could be overcome by a toxic or oxygen-deficient atmosphere, these procedures must be followed:

- Employees must never enter a dangerous atmosphere without first obtaining the proper protective equipment and permission to enter the area.
- Employee must never enter a dangerous atmosphere without at least one additional employee present, who is stationed outside the danger zone.
- Communications must be maintained between all employees in both areas.
  The employee in the safe area must have the proper rescue equipment to perform a satisfactory rescue of any employee in the danger zone.

H. Respirator Care and Maintenance

Respirators must be properly maintained in order to ensure adequate protection for employees. Proper maintenance involves a thorough visual inspection for cleanliness and defects. Inspections should include a check of the tightness of connections and the conditions of the face piece, the headbands and values, and the connecting tube and canisters or cartridges. Worn or deteriorated parts must be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to regulators or alarms of atmosphere-supplying respirators (SCBAs) will be conducted only by the manufacturer. (See the *Reference* section for the link to these procedures.)

Employees are responsible to clean and disinfect respirators regularly to ensure they are sanitary. This can be accomplished by washing the respirator in a detergent solution and then disinfecting by immersion in a sanitizing solution. Strong cleaning and sanitizing agents may damage respiratory parts and should be used with caution. Refer to the manufacturer's recommendations. Respirators should be air dried and stored in a clean, dry plastic bag or other air tight container to prevent deformation of the face piece and exhalation value. (Do not store respirators in sealed plastic bags when still damp.)

Respirator filters and cartridges will be changed according to manufacturer's recommendations or when an employee first begins to experience difficulty breathing (i.e., excessive resistance) while wearing the mask.

Repairs or adjustments to respirators will be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.

16.3.6 Program Evaluation

The Safety Manager may conduct periodic evaluations of the workplace(s) as requested to ensure that provisions of the Respiratory Protection Policy are appropriately implemented and to identify areas needing improvement. Evaluations will include regular consultations with employees who use respirators to review "wearer acceptance" of all respiratory protection items; e.g., respirator fit and effectiveness, appropriate respirator selection for the hazards encountered, proper respirator use under the workplace conditions encountered, and proper respirator maintenance.

Additional review will include discussions with work supervisors, general site inspections, air monitoring when required, and a review of respiratory protection training records. Areas requiring attention will be recorded and addressed.

16.3.7 Documentation and Recordkeeping

Copies of training and fit testing records will be kept current. The completed medical questionnaire and the physician's documented findings are confidential and remain at the local Federal Occupational Health Office. The safety office will retain a copy of only the physician's written recommendation regarding each employee's ability to wear a respirator. This record is provided to the employee and a copy is retained in the employee personal medical record files in human resources.

H-1112-1 SAFETY AND HEALTH MANAGEMENT DEFINITIONS

Air-purifying respirator – A respirator with an air-purifying filter cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element

Atmosphere-supplying respirator – A respirator that supplies the user with breathing air from a source independent of the atmosphere, and includes supplied-air respirators (SARs) and contained breathing apparatus (SCBA) units

Canister or Cartridge – A container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container

Employee exposure – Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection

Filtering face piece (dust mask) – A negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium

Fit factor – A quantitative estimate of the fit of a particular respirator to a specific individual

Fit test – The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual

Helmet – A rigid respiratory inlet covering that also provides head protection against impact and penetration

High efficiency particulate air (HEPA) filter – A filter that is at least 99.97% efficient in removing particles of a small diameter from the air

Immediately dangerous to life or health (IDLH) – An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere

Loose-fitting face piece – A respiratory inlet covering that is designed to form a partial seal with the face

Oxygen deficient atmosphere – An atmosphere with oxygen content below 19.5% by volume

Qualitative fit test (QLFT) – A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent

Quantitative fit test (QNFT) – An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator

Service life – The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer

Tight-fitting face piece – A respiratory inlet covering that forms a complete seal with the face

User seal check – An action conducted by the respirator user to determine if the respirator is properly seated to the face

Powered air-purifying respirator (PAPR) – an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering on the respirator

H-1112-1 SAFETY AND HEALTH MANAGEMENT
References

Federal OSHA

Occupational Safety and Health Administration (OSHA)
www.osha.gov/sltc/respiratoryprotection/index.html
This site contains information regarding the current respiratory protection standard, directives, respirator facts, user notices, and training materials

National Institute for Occupational Safety and Health
www.cdc.gov/niosh/topics/respirators/
This site provides information concerning respirator selection, use, care and maintenance
Link to *NIOSH/OSHA Pocket Guide to Chemical Hazards*

State OSHA

Website for Oregon OSHA - www.orosha.gov

Website for Washington State OSHA - www.wisha.gov

Current OSHA News

OSHA Trade News Release
Thursday, June 5, 2003

OSHA TO PROPOSE REVISED RESPIRATORY PROTECTION STANDARDS

Washington – The Occupational Safety and Health Administration will publish two proposed rules in the Federal Register to enhance worker protections from respiratory hazards on the job. OSHA is seeking comments until September 4, 2003, on its proposals to amend the Respiratory Protection Standards to include a new fit testing procedures and incorporate new Assigned Protection Factors (APFs) for respiratory protection programs that are expected to prevent approximately 4,000 injuries and illnesses and prevent about 900 deaths annually from cancer and other chronic diseases.

OSHA also is seeking comment on its proposal to approve a new testing protocol for its Respiratory Protection Standard. The proposed protocol is referred to as controlled negative pressure (CNP), which requires three different test exercises followed by two re-donning of the respirator. The current OSHA CNP protocol specifies eight test exercises, including one re-donning of the respirator.

Tuesday, March 30, 2004

OSHA is **extending** the deadline for receipt of post-hearing public comments and briefs on its proposed "Assigned Protection Factors" rule to April 29 and May 29, 2004, respectively. This action is in response to interested parties who have requested the additional time. Relevant documents may be found on the OSHA website at http://www.osha.gov.

H-1112-1 SAFETY AND HEALTH MANAGEMENT
References

Links to Standard and Appendices for OSHA 29 CFR 1910.134 Respiratory Protection

29 CFR 1910.134
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=12716

Appendix A Fit Testing Procedures (Mandatory)
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9780

Appendix B-1 User Seal Check Procedures (Mandatory)
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9781

Appendix B-2 Respirator Cleaning Procedures (Mandatory)
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9782

Appendix C Respirator Medical Evaluation Questionnaire (Mandatory)
www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9783

Appendix D Information for Employees Using Respirators When Not Required Under Standard

See the following page for entire document.

Appendix D - Information for Employees Using Respirators When Not Required Under Standard

(Mandatory)

www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9784

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

- OSHA *Read and heed all instructions* provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator limitation.

- OSHA *Choose respirators certified for use to protect against the contaminant of concern*. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certify respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

- OSHA *Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed* to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

- OSHA *Keep track of your respirator* so that you do not mistakenly use a respirator that belongs to someone else.

H-1112-1 SAFETY AND HEALTH MANAGEMENT
Frequently Asked Questions (FAQs) – Quick Check Information

What is a respirator?
A respirator is a protective face piece, hood or helmet that is designed to protect the wearer against a variety of harmful airborne agents.

When is the use of respirators required?
The OSHA respirator standard, *29CFR 1910.134*, requires the use of respirators to protect employees from breathing contaminated and/or oxygen-deficient air when effective engineering controls are not feasible, or while they are being instituted. Several other OSHA regulations (29 CFR 1910 and 1926) also require the use of respirators.

Can any respirator be used?
No, respirators must be selected on the basis of hazards to which the worker is exposed (i.e., particulates, vapors, oxygen-deficiency, or combination). Also, OSHA requires the use of certified respirators.

Who certifies respirators?
The National Institute for Occupational Safety and Health (NIOSH)

Why is a formal respirator program needed?
A respirator program increases the chances of using a respirator correctly. A respirator will only protect an employee if it is used correctly. Also, OSHA requires a number of written elements for all respiratory protection programs.

What do employees need to know about the respirator program?
Employers must establish and implement a written respiratory protection program with worksite-specific procedures and elements for all required respirator use. The provisions of the program include procedures for selection, medical evaluation, fit testing, training, use and care of respirators.

How is the proper respirator size determined?
Proper respirator size is determined through a fit test. Employees using negative or positive pressure tight-fitting face piece respirators must pass an appropriate fit test using the procedures detailed in the OSHA standard.

Can an employee check the fit of their respirator?
Yes, employees using tight-fitting face piece respirators are required to perform a user seal check each time they put on the respirator using the procedures in *Appendix B-1* of *29 CFR 1910.134* or procedures recommended by the respirator manufacturer that the employee demonstrates are as effective as the OSHA procedures. Note that a ***fit test*** is a method used to select the right size respirator for the user. A ***user seal check*** is a method the employee uses to check for correct fit and adjustment.

H-1112-1 SAFETY AND HEALTH MANAGEMENT
Frequently Asked Questions (FAQs) – Quick Check Information

When a respirator is fit test required?
Fit testing of all negative or positive pressure tight-fitting face piece respirators is required ***prior*** to initial use, whenever a different respirator face piece is used, and at least annually thereafter. An additional fit test is required whenever there are changes in the user's physical condition that could affect respirator fit (e.g., dental changes, facial scarring, etc). The employer must be fit tested with the same make, model, style, and size of respirator that will be used.

Must employees see a doctor before they use a respirator?
The employer must provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. Not all workers must be examined by a doctor. A physician or other licensed health care professional must perform the medical evaluation using the medical questionnaire contained in *Appendix C* of *29 CFR 1910.134* or an initial medical examination that obtains the same information.

What maintenance and care is required for respirators?
The employer must provide for the cleaning and disinfecting, storage, inspection, and repair of respirators used by employees according to the procedures in *29 CFR 1910.134*.

Can a respirator be used by more than one person? How often should it be cleaned and disinfected?
Disposable respirators cannot be disinfected, and are therefore assigned to only one person. Disposable respirators must be discarded if they are soiled, physically damaged, or reach the end of their service life. Replaceable filter respirators may be shared, but must be thoroughly cleaned and disinfected after each use before being worn by a different person, using the procedures in *Appendix B-2* of *29 CFR 1910.134*, or equally effective procedures recommended by the manufacturer.

What is the proper way to store a respirator that is used routinely?
Respirators must be stored to protect them from damage, contamination, dust, sunlight, extreme temperature, excessive moisture, and damaging chemicals. They must also be packed or stored to prevent deformation of the face piece and exhalation value.

What are the employer's obligations when respiratory protection is not required but employees wear respirators on their own accord?
The employer must implement those elements of the written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that it use does not present a health hazard to the user. Also, employers must provide the voluntary respirator users with the information contained in *Appendix D* of *29 CFR 1910.134*. Employers are not required to include in a written respiratory program those employees whose only use of respirators involves the voluntary use of filtering face pieces (dust masks).

H-1112-1 SAFETY AND HEALTH MANAGEMENT
Frequently Asked Questions (FAQs) – Quick Check Information

Is training required before a respirator is used?
Yes, training must be provided to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually.

If employees have a beard or moustache, is their respirator still effective?
Tight-fitting face piece respirators must not be worn by employees who have facial hair that comes between the sealing surface of the face piece and the face or that interferes with value function. Respirators that do not rely on tight face seal, such as hoods or helmets may be used by bearded individuals.

Can employees wear glasses while wearing a respirator?
Yes, but if an employee wears corrective glasses or goggles or other personal protective equipment, the employer must ensure that such equipment is worn in a manner that does not interfere with the seal of the face piece to the face of the user. Kits available from respirator manufacturers allow the mounting of prescription lenses inside the respirator.
Contact lenses can be worn with any type of respirator, but their use is not recommended in dusty atmospheres while wearing a half-mask face piece.

Can dust in the air make employees ill soon after breathing it?
Intense exposures to any types of dust and smoke can cause eye, nose, throat and lung irritation, triggering coughing and sneezing. These symptoms are usually short-term. When they persist or are very severe, they may be symptoms of a more serious injury. Such severe reactions usually occur in the first day or so after a high-level exposure and include persistent shortness of breath, rapid breathing, chest pain or tightness, headache, dizziness, or fainting. Individuals with asthma, other lung conditions, or heart disease are generally more vulnerable to the effects of dust and smoke.

Are masks useful for reducing exposure to dust?
Protective dust masks and dust-filtering respirators can keep dust out of inhaled air. For workers and volunteers working in dusty areas, exposure can be reduced by routine use of well-fitted dust masks (such as an N95 mask or more protective NIOSH-approved respirators available commercially).

What else can employees do to avoid breathing dust?
Employees should avoid inhaling dust or limit exposure as much as possible. Employees should limit or avoid the use of dry sweeping and other dust-clearing procedures that disturb settled dust and raise it into the air. Dampening settled dust with a fine water mist can markedly reduce the amount of dust that is raised by activity. (Caution: Excessive wetting may create a slip and fall hazard. Slip-resistant shoes or boots may be helpful).

What should an employee do if they believe they have been affected from breathing smoke or dust?

It is not necessary to visit an emergency room or physician if you are suffering from minor conditions such as eye irritation, coughing, or sneezing. However, if you are having persistent cough, severe eye irritation, or more serious symptoms such as shortness of breath, check with a health care professional.

H-1112-1 SAFETY AND HEALTH MANAGEMENT
TABLE 1 - Voluntary and Required Respirator Use – OSHA Application Examples – Typical BLM District Activities

Voluntary and Required Respirator Use For _____ *(identify district office)*	
Respirator	**Department/Process***
Filtering face piece N95 (dust mask) Paper masks that are 95% effective non-oil resistant masks used to reduce inhaled concentrations of dusts, fibers, fumes, mist, and radioactive and biological materials such as wood and seed dusts Acceptable masks include: 3M® 8210 (nuisance dusts, biological) Modex® 1100 (nuisance dusts, biological) Modex® 2200/2300 series (tree marking paint) Modex®2400 (tree marking)	Voluntary use for: • warehouse workers – sweeping, sorting, small wood working/maintenance projects • mail handlers • first aid responders (EMTs are required to meet further standards per the *Blood borne Pathogen Program*) • road maintenance operations • forestry activities (tree marking) • see orchard workers – tilling, sweeping, pollen collection, seed extraction • recreation sites/parks – maintenance activities, high pressure cleaning
Half-face piece Air Purifying Respirator (APR) with N95 Pre-filter (pre-filters attach to respirator cartridges (organic vapor) in combination to reduce inhaled concentrations of pesticides Acceptable masks include: Survivair® half-face respirator with organic vapor cartridge with N95 Pre-filter Wilson® half-face respirator with organic vapor cartridge with pre-filter N95	Use – Requires medical evaluation, training, and fitness testing • soils (biologicals) • recreation sites/parks – painting of physical structures with oil-based paints (specific chemical cartridge application • pesticide application (specific chemical cartridges)
Full-Face Air Purifying Respirator (APR) with P100/N100 Particulate Filters – specific application cartridges, or canisters Acceptable masks include: Survivair® full-face respirator with various cartridges Scott® full-face respirator with mil-spec canister	Use – Requires medical evaluation, training, and fitness testing • Law Enforcement – CN/CS gas applications • Safety Officials – dependent upon location of inspection sites and requirements

*Work activities requiring *self-contained breathing apparatus (SCBA)* (or *Escape SCBA*) units are generally not performed by BLM employees at the district level; e.g., structural fire fighting, dip coat tank cleaning and painting, permit-required confined space entry [hazardous and/or oxygen-deficient atmospheres, or any other atmospheres that would present an immediate danger to life and health [IDLH]), etc. Refer to the *Confined Space Entry Policy* and the *Hazardous Material Spill and Response Policy* for specific information and training requirements for these activities.

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TABLE 2 – TWA/PEL Examples

Work Group Task	Contaminants	Exposure Level (8-hr Time Weighted Average [TWA])	Permissible Exposure Level (PEL)	Controls
ALL – Operations, Maintenance and Repair Activities (sweeping, sanding, dimension lumber cutting)	Nuisance dusts Wood dusts	Not Measured	0.5 mg/m³	Follow Risk Assessment (RA) procedures. Wear dust masks (N95) as necessary. Use limit of 1.0 mg/m³ for dust from hardwoods such as beech, oak, and western red cedar
Road Maintenance Heavy Equipment Operations: Rock Drilling, Sweeping	Nuisance dusts Silica Crystalline-Quartz Road construction and rock drilling is a source of crystalline silica exposure due to the mechanical formation of crystalline silica dust when sand and aggregate is moved. The fine dust can have significant amounts of crystalline silica, depending upon the source of the aggregate. (Waste dust is transferred periodically by front end loader, resulting in clouds of visible dust drifting in vicinity of operator.)	Not Measured	0.5 mg/m³ Reference: Table Z-3 – Mineral Dusts 29 CFR 1910.1000 Subpart Z – Toxic and Hazardous Substances (Air Contaminants)	Follow Risk Assessment (RA) procedures Wear dust masks (N95) as necessary Assess the potential for exposing employees to crystalline silica during operations. Conduct air monitoring to measure worker exposure. Use control measures such as wet drilling and exhaust ventilation to minimize exposures. Practice good personal hygiene to avoid unnecessary exposure to silica dust. Wear washable or disposable protective clothing at work site; change clothes prior to leaving work to prevent outside contamination. Use respiratory protection when source controls cannot keep silica exposures below the PEL. Provide periodic medical examinations for all workers who may be exposed to crystalline silica. Post signs to warn workers of the hazard and provide information regarding required protective equipment. Provide training regarding health effects, work practices.
Mail Handling and Sorting	Nuisance dusts Bacterial spores (Anthrax) [assuming small risk in non-postal facilities]	Not Measured	Not Established *Recommendations: Gloves – nitrile or vinyl N95 dust masks	Reference: CDC Health Advisory – "Recommendations for Protecting Workers from Exposure to *Bacillus anthracis* in Work Sites Where Mail is Handled or Processed"[6] Follow RA procedures

[6] Document may be referenced on the CDC website: http://www.bt.cdc.gov/documentsapp/anthrax/10312001/han51.asp

Illustration 2-2
(16.3-2)

H-1112-1 SAFETY AND HEALTH MANAGEMENT
TABLE 2 – TWA/PEL Examples

Work Group Task	Contaminants	Exposure Level (8-hr Time Weighted Average [TWA])	Permissible Exposure Level (PEL)	Controls
Seed Orchard Pollen collection Seed Extraction	Nuisance dust Wood dust	Not Measured	0.5 mg/m³	Follow RA procedures for seed extraction process; use local exhaust ventilation system Wear dust masks (N95) as necessary Use limit of 1.0 mg/m³ for dust from hardwoods such as beech, oak and western red cedar
Warehouse Sweeping, sorting, wood working	Nuisance dust Wood dust	Not Measured Cautionary Guidelines	0.5 mg/m³	Follow RA procedures Use limit of 1.0 mg/m³ for dust from hardwoods such as beech, oak, and western red cedar Wear dust masks (N95) as necessary.
Seed Orchard Pesticide Application	Lindane (*Gamma Isomer of Benzene Hexachloride*) Cyclohexanone Xylene	Not Measured Cautionary Guidelines	0.5 mg/m³ 50 ppm 100 ppm	Follow RA procedures Use strictly in accordance with precautionary statements and direction per Manufacturer's Product Bulletin (Pesticide Instruction Use and Application Methods approved by EPA) Follow Integrated Pest Management Plan Use APR with Organic Vapor Cartridge and N95 pre-filter (dust, fumes, mists) for pesticide applications Avoid skin contact Remove and dispose of respirator cartridge and pre-filter at end of each work shift
Law Enforcement CN/CS application	Chloroacetophenone (CN) o-Chlorobenzylidene malononitrile	Not Established Not Established	0.05 ppm 0.05 ppm	Follow RA procedures Air purifying, full-face piece respirator (gas mask) with a chin-style, front or back mounted canister providing protection against the compound of concern and having a high efficiency particulate filter (P100 or N100) Law Enforcement Applications & Training

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TABLE 3 – OSHA Respirator Selection: Characteristics and Factors

(Simplified Chart)

Hazard	Respirator
***Not** immediately dangerous to life or health(IDLH)*	
Gas and vapor contaminants	Positive-pressure SAR. Gas mask. Chemical-cartridge or canister respirator.
Particulate contaminants	Positive-pressure SAR including abrasive blasting respirator. Powered air-purifying respirator equipped with high-efficiency filters. Any air-purifying respirator with a specific particulate filter
Gaseous and particulate contaminants	Positive-pressure supplied-respirator. Gas mask. Chemical-cartridge respirator with mechanical filters
Smoke and other fire-related contaminants	Positive-pressure SCBA
Immediately dangerous to life or health (IDLH)[7]	
Oxygen deficiency	Full-face piece, pressure-demand SCBA certified for a minimum service life of 30 minutes. A combination full-face piece, pressure-demand SAR with an auxiliary self-contained air supply.
Gas, vapor contaminants and other highly toxic air contaminants	Full-face piece, pressure-demand SCBA certified for a minimum service life of 30 minutes. A combination full-face piece, pressure-demand SAR with an auxiliary self-contained air supply.
Contaminated atmospheres – for escape	Positive-pressure SCBA. Gas mask. Combination positive-pressure SAR with escape SCBA.

[7] Immediately dangerous to life or health (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Illustration 4
(16.3-4)

H-1112-1 SAFETY AND HEALTH MANAGEMENT
Risk Management Worksheet*

(*Official form may be referenced on the Safety Website and the BLM Forms Link on the Intranet.)

For Illustration Only

1. Organization and Location					2. Page ___ of ___
3. Operation/Task		4. Beginning Date	5. Ending Date		6. Date Prepared
7. Prepared by *(Name/Duty Position)*					

8. Identified Hazards	9. Assess the Hazards: Initial Risk				10. Control Measures Developed for Identified Hazards **(include all PPE)**	11.Assess the Hazard's Residual Risk				12. How to Implement the Controls	13 Supervisors and Evaluation By
(Be Specific)	**L**	**M**	**H**	**E**	**(Be Specific)**	**L**	**M**	**H**	**E**	**(Be Specific)**	**(Be Specific)**

14. Remaining Risk Level After Control Measures Are Implemented. (Circle Highest Remaining Risk Level)	**LOW** Line Supervisor	**MEDIUM** (Branch Chief)	**HIGH** (District Manager)	**EXTREMELY HIGH** (Must be State Director/Associate)

15. **RISK DECISION AUTHORITY**: (Approval/Authority Signature Block) [If initial risk level is Medium, High or Extremely High, brief risk decision authority at that level on controls and control measures used to reduce risks)
NOTE: If the person preparing the form signs this block, the signature indicates only that the appropriate risk decision authority was notified of the initial risk level, control measures taken and appropriate resources required; and, that the risk was accepted by the decision authority.]

_____
Signature

Form 1112-5
(May 2001)